

Weekly report (2017-10-30 ----- 2017-11-05)

Nov 5th, 2017, 20:37 pm

1. Progress

Table 1. Progress

Tasks	IN PROGRESS	Date
statistic charts survey	collect papers and read some of them	11.25
dimensionality reduction		11.30
highway project		12.10
*2Vec survey	read papers	12.30

2. Work

This week, I continue to collect papers related to statistic charts, until the end of this week, I have collected more than 100 papers from IEEE VIS (VAST, InfoVis and SciVis), EuroVis, Pacific Vis, TVCG, CGF and SIGCHI. I sorted them by categories and I also made tags in some of them.

Also, I have discussed with Prof. Jiazhi Xia. We plan to determine the framework of the survey in the next week.

3. Research

3.1 Paper reading

1. InterAxis: Steering Scatterplot Axes via Observation-Level Interaction

Tasks: a user interaction technique enabling seamless interactivity via both data objects and data attributes to steer the meaning of the axes.

Limitations: First, what if the axis semantically meaningful to us is highly non-linear or curvi-linear? Second, another limitation of the interaction technique arises when the multi-dimensional data are sparse, meaning that there are few non-zero entries per dimension or data item.

2. TripAdvisor^{N-D}: A Tourism-Inspired High-Dimensional Space Exploration Framework with Overview and Detail

Tasks: the goal of the system is to give users the ability to interactively refine the outcome of these automated routines or even tune their parameters so as to better fit their specific goals and expectations.

Design method: the framework renders the glyphs from generalized 2D scatterplot projections and then lays them out via MDS using a correlation metric based on spatial similarity.

3.2 Collected paper

Collected paper of recent years and classify them by items, including the related survey of statistic charts, scatterplots, histogram, line chart, bar chart, sparkline, Venn diagram and heat map etc.

ScatterPlots			
序号	年份	论文名	期刊
1	2017	Scatterplots: Tasks, Data, and Designs	InfoVis
2	2017	An Empirical Study on the Reliability of Perceiving Correlation Indices using Scatterplots	EuroVis
3	2017	Interactive Regression Lens for Exploring Scatter Plots	EuroVis
4	2017	Cluster-based Visual Abstraction for Multivariate Scatterplots	TVCG
5	2017	Towards Perceptual Optimization of the Visual Design of Scatterplots	PVis
6	2016	The Connected Scatterplot for Presenting Paired Time Series	InfoVis
7	2015	InterAxis: Steering Scatterplot Axes via Observation-Level Interaction	VAST

8	2015	Dynamic Opacity Optimization for Scatter Plots	SIGCHI
9	2015	A Multi-task Comparative Study on Scatter Plots and Parallel Coordinates Plots	CGF
10	2014	Visual abstraction and exploration of multi-class scatterplots	TVCG
11	2014	ScagExplorer: Exploring Scatterplots by Their Scagnostics	PVis
12	2013	Perception of Average Value in Multiclass Scatterplots	TVCG
13	2013	The Generalized Sensitivity Scatterplot	TVCG
14	2013	Empirical Guidance on Scatterplot and Dimension Reduction Technique Choices	TVCG
15	2013	TripAdvisor ^{N-D} : A Tourism-Inspired High-Dimensional Space Exploration Framework with Overview and Detail	TVCG
16	2013	GPLOM: The Generalized Plot Matrix for Visualizing Multidimensional Multivariate Data	TVCG
17	2013	Selecting Coherent and Relevant Plots in Large Scatterplot Matrices	EuroVis

18	2010	The FlowVizMenu and Parallel Scatterplot Matrix: Hybrid Multidimensional Visualizations for Network Exploration	TVCG
19	2008	Brushing of Attribute Clouds for the Visualization of Multivariate Data	TVCG
Histogram			
序号	年份	论文名	期刊
1	2017	Hashedcubes: Simple, Low Memory, Real-Time Visual Exploration of Big Data	TVCG
2	2017	Histogram equalization and specification for high-dimensional data visualization using RadViz	Proceedings of the Computer Graphics International Conference
3	2016	Scalable Visualization of Time-varying Multi-parameter Distributions Using Spatially Organized Histograms	TVCG
4	2015	Guided Volume Editing based on Histogram Dissimilarity	EuroVis

5	2015	Hybrid Data Visualization Based on Depth Complexity Histogram Analysis	CGF
6	2015	Efficient Local Histogram Searching via Bitmap Indexing	EuroVis
7	2014	Visual Methods for Analyzing Probabilistic Classification Data	TVCG
8	2013	Integrating Isosurface Statistics and Histograms	TVCG
9	2013	Efficient Local Statistical Analysis via Integral Histograms with Discrete Wavelet Transform	TVCG
10	2012	Histomages: fully synchronized views for image editing	SIGCHI
11	2012	Visualizing set-valued attributes in parallel with equal-height histograms	SIGCHI
12	2012	Hierarchical Exploration of Volumes Using Multilevel Segmentation of the Intensity-Gradient Histograms	TVCG
Bar Chart			
序号	年份	论文名	期刊

1	2017	Readability and Precision in Pictorial Bar Charts	EuroVis
2	2017	Raising the Bars: Evaluating Treemaps vs. Wrapped Bars for Dense Visualization of Sorted Numeric Data	SIGCHI
3	2017	Evaluation of the Comprehensiveness of Bar Charts with and without Stacking Functionality using Eye-Tracking	SIGCHI
4	2016	Comparing Bar Chart Authoring with Microsoft Excel and Tangible Tiles	EuroVis
5	2015	An Evaluation of the Impact of Visual Embellishments in Bar Charts	CGF
6	2014	Order of Magnitude Markers: An Empirical Study on Large Magnitude Number Detection	TVCG
7	2014	Error Bars Considered Harmful: Exploring Alternate Encodings for Mean and Error	TVCG
8	2014	Sample-oriented task-driven visualizations: allowing users to make better, more confident decisions	SIGCHI

9	2014	DimpVis: Exploring Time-varying Information Visualizations by Direct Manipulation	TVCG
10	2014	Four Experiments on the Perception of Bar Charts	TVCG
11	2013	Scale-Stack Bar Charts	EuroVis
12	2013	LineUp: Visual Analysis of Multi-Attribute Rankings	TVCG
Line Chart			
序号	年份	论文名	期刊
1	2017	Line Graph or Scatter Plot? Automatic Selection of Methods for Visualizing Trends in Time Series	TVCG
2	2016	Visual Analysis of Cloud Computing Performance Using Behavioral Lines	TVCG
3	2016	TimeNotes: A Study on Effective Chart Visualization and Interaction Techniques for Time-Series Data	TVCG
4	2016	ViDX: Visual Diagnostics of Assembly Line Performance in Smart Factories	VAST

5	2015	Investigating the Direct Manipulation of Ranking Tables for Time Navigation	SIGCHI
6	2015	An Efficient Framework for Generating Storyline Visualizations from Streaming Data	TVCG
7	2014	Ranking Visualizations of Correlation Using Weber's Law	TVCG
8	2013	Providing access to the high-level content of line graphs from online popular media	SIGCHI
9	2013	Interactive horizon graphs: improving the compact visualization of multiple time series	TVCG
10	2013	Providing access to the high-level content of line graphs from online popular media	SIGCHI
11	2009	Sizing the horizon: the effects of chart size and layering on the graphical perception of time series visualizations	SIGCHI
Sparkline			
序号	年份	论文名	期刊
1	2017	Squares: Supporting Interactive Performance Analysis for Multiclass Classifiers	TVCG

2	2016	Visual Analysis and Dissemination of Scientific Literature Collections with SurVis	TVCG
3	2015	Exploring the Effect of Word-Scale Visualizations on Reading Behavior	SIGCHI
4	2014	Attribute Signatures: Dynamic Visual Summaries for Analyzing Multivariate Geographical Data	TVCG
5	2014	Interactive Generation of Visual Summaries for Multivariate Geographical Data Analysis	Eighth International Conference on Geographic Information Science
6	2014	Exploring the Placement and Design of Word-Scale Visualizations	TVCG
7	2014	Moving beyond sequential design: Reflections on a rich multi-channel approach to data visualization	TVCG
8	2013	Visual Analysis of Topic Competition on Social Media	TVCG

9	2012	RankExplorer: Visualization of Ranking Changes in Large Time Series Data	TVCG
10	2011	Interactive sparklines: a dynamic display of quantitative information	SIGCHI
11	2010	SparkClouds: Visualizing Trends in Tag Clouds	TVCG
12	2006	Beautiful Evidence	Graphics Press LLC
13	2004	Sparklines: Intense, simple	Word-sized graphics
Venn diagram			
序号	年份	论文名	期刊
1	2016	The State-of-the-Art of Set Visualization	Computer Graphics Forum
2	2014	Visualizing sets and set-typed data: State-of-the-art and future challenges	EuroVis
3	2014	The Impact of Shape on the Perception of Euler Diagrams	International Conference on Theory

			and Application of Diagrams
4	2014	See what you want to see: visual user-driven approach for hybrid recommendation	SIGCHI
5	2014	Drawing Area-Proportional Euler Diagrams Representing Up To Three Sets	TVCG
6	2014	A survey of Euler diagrams	Journal of Visual Languages & Computing
7	2014	UpSet: Visualization of Intersecting Sets	TVCG
8	2012	Wellformedness Properties in Euler Diagrams: Which Should Be Used?	TVCG
9	2012	Exact and Approximate Area-Proportional Circular Venn and Euler Diagrams	TVCG
10	2011	Oops, I did it again: mitigating repeated access control errors on facebook	SIGCHI
11	2011	Inductively Generating Euler Diagrams	TVCG
12	2010	Untangling Euler Diagrams	TVCG
Heat map			

序号	年份	论文名	期刊
1	2017	Fauxvea: Crowdsourcing Gaze Location Estimates for Visualization Analysis Tasks View Document	TVCG
2	2017	Data Flow Analysis and Visualization for Spatiotemporal Statistical Data without Trajectory Information	TVCG
3	2017	Design and Evaluation of WebGL-Based Heat Map Visualization for Big Point Data	The Rise of Big Spatial Data
4	2016	Visualizing Waypoints-Constrained Origin-Destination Patterns for Massive Transportation Data	Computer Graphics Forum
5	2016	Model-based real-time visualization of realistic three-dimensional heat maps for mobile eye tracking and eye tracking in virtual reality	SIGCHI
6	2016	Heatmap Explorer: an interactive gaze data visualization tool for the evaluation of computer interfaces	Proceedings of the 15th Brazilian Symposium

			on Human Factors in Computer Systems Article
7	2016	3D Regression Heat Map Analysis of Population Study Data	TVCG
8	2015	MoleCollar and Tunnel Heat Map Visualizations for Conveying Spatio- Temporo-Chemical Properties Across and Along Protein Voids	Computer Graphics Forum
9	2014	A Heatmap-Based Time-Varying Multi- variate Data Visualization Unifying Numeric and Categorical Variables	IV
10	2014	Maps of Computer Science	PacificVis
11	2013	Visual Exploration of Big Spatio-Temporal Urban Data: A Study of New York City Taxi Trips	TVCG
12	2013	Space-Time Visual Analytics of Eye-Tracking Data for Dynamic Stimuli	TVCG
13	2012	Heat maps as a usability tool for multi-touch interaction in mobile applications	SIGCHI

Box plot			
序号	年份	论文名	期刊
1	2017	A Visual Analytics Approach for Categorical Joint Distribution Reconstruction from Marginal Projections	TVCG
2	2017	StatPlayground: Exploring Statistics through Visualizations	SIGCHI
3	2016	Spatial Reasoning and Data Displays	TVCG
4	2014	Curve Boxplot: Generalization of Boxplot for Ensembles of Curves	TVCG
5	2013	Contour boxplots: A method for characterizing uncertainty in feature sets from simulation ensembles	TVCG
6	2012	Vismon: Facilitating Analysis of Trade-Offs, Uncertainty, and Sensitivity In Fisheries Management Decision Making	EuroVis
7	2011	Uncertainty - Aware Exploration of Continuous Parameter Spaces Using Multivariate Prediction	CGF

8	2011	A User Study of Visualization Effectiveness Using EEG and Cognitive Load	CGF
9	2010	Visualizing Summary Statistics and Uncertainty	CGF
Pie Chart			
序号	年份	论文名	期刊
1	2017	Iterating between Tools to Create and Edit Visualizations	TVCG
2	2016	Arcs, Angles, or Areas: Individual Data Encodings in Pie and Donut Charts	EuroVis
3	2016	iVoLVER: Interactive Visual Language for Visualization Extraction and Reconstruction	SIGCHI
4	2016	Judgment error in pie chart variations	EuroVis
5	2013	ExPlates: Spatializing Interactive Analysis to Scaffold Visual Exploration	CGF
6	2011	The Cognitive Science of Visual-Spatial Displays: Implications for Design	Topics in cognitive science
7	2007	Animated Transitions in Statistical Data Graphics	TVCG

